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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09,435,448	11/22/1999	YASUYOSHI YAMADA	Q56857	5236

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2100 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20037

EXAMINER

GRAYBILL, DAVID E

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/435,448	YAMADA, YASUYOSHI	
	Examiner	Art Unit	
	David E Graybill	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The scope of claims 15 and 16 is unclear because there is insufficient literal antecedent basis for the term "said group."

In the rejections infra, reference labels are generally recited only for the first recitation of identical claim language.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 7, 14, 15 and 17-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Kaneshiro (10-56093).

In the English abstracts, translation and figures, Kaneshiro teaches a back electrode electronic part comprising: a main body 2 including a circuit 5; and electrodes 20 arranged for solder bumps 9 on a back surface portion of said electronic part and connected to said circuit; wherein said electrodes are arranged in groups of electrodes at portions of the electrode arrangement; and said groups of electrodes are provided for a

single first solder bump which is larger than second solder bumps for said electrodes arranged other than in said groups of electrodes, and said groups of electrodes having a substantially same potential level [ground, voltage or non-contact potential level] when said circuit operates, wherein said electrodes arranged for solder bumps protrude from said electronic part so as to support said solder bumps, wherein said electrodes arranged for solder bumps are provided on the rearmost surface of said electronic part, and an electronic assembly comprising: a back electrode electronic part comprising: a main body including a circuit, and electrodes arranged on a back surface portion of said electronic part and connected to said circuit, wherein said electrodes are arranged into groups of electrodes at portions of the electrode arrangement; said groups of electrodes includes said electrodes having a substantially same potential level when said circuit operates; said electronic assembly further comprising; a printed circuit board 20 having substrate electrodes 21 corresponding to said electrodes provided for said electronic part, wherein one of said substrate electrodes as a first substrate electrode is provided for each of said groups of electrodes, and said substrate electrodes as second substrate electrodes other than said first substrate electrodes are provided for said electrodes

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of said electronic part other than in said groups of electrodes, and solder bumps 9 including first solder bumps connected with said groups of electrodes and said first substrate electrodes and second solder bumps connected with said second substrate electrodes and said electrodes of said electronic part other than said groups of electrodes, wherein said electrodes arranged for solder bumps protrude from said electronic part so as to support said solder bumps, wherein said electrodes arranged for solder bumps are provided on the rearmost surface of said electronic part, and a back electrode electronic part comprising: at least two first electrodes 10 positioned on a rear surface of said electronic part so as to be connected to a first solder bump, at least one second electrode 10 positioned on a rear surface of said electronic part so as to be connected to a second solder bump, wherein said first solder bump has a larger lateral cross section than said second solder bump, wherein each of said first electrodes and second electrode are arranged in a matrix on said rear surface of said electronic part.

To further clarify the teaching of the limitations, "for a single first solder bump which is larger than second solder bumps for said electrodes arranged other than in said groups of electrodes," and, "so as to be connected to a first solder bump,

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wherein said first solder bump has a larger lateral cross section than said second solder bump," it is noted that these limitations are statements of intended use of the product which does not result in a structural difference between the claimed product and the product of Kaneshiro. Further, because the product of Kaneshiro has the same structure as the claimed product, it is inherently capable of being used for the intended use, and the statement of intended use does not patentably distinguish the claimed product from the product of Kaneshiro. Similarly, the manner in which a product operates is not germane to the issue of patentability of the product; Ex parte Wikdahl 10 USPQ 2d 1546, 1548 (BPAI 1989); Ex parte McCullough 7 USPQ 2d 1889, 1891 (BPAI 1988); In re Finsterwalder 168 USPQ 530 (CCPA 1971); In re Casey 152 USPQ 235, 238 (CCPA 1967). Also, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."; Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). And, claims directed to product must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does [or is intended to do]." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

Claims 1, 13-15, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakuyama (6018462).

At column 1, lines 60-62, and column 2, line 31 to column 4, line 4, Sakuyama teaches a back electrode electronic part comprising: a main body 1 including a circuit 5; and electrodes 4a-4d arranged for solder bumps 9 on a back surface portion of said electronic part and connected to said circuit; wherein said electrodes are arranged in groups of electrodes at portions of the electrode arrangement; and said groups of electrodes are provided for a single first solder bump which is larger than second solder bumps for said electrodes arranged other than in said groups of electrodes, and said groups of electrodes having a substantially same potential level when said circuit operates, wherein said group of electrodes are directly connected to said first solder bump, wherein said electrodes arranged for solder bumps protrude from said electronic part so as to support said solder bumps, wherein said electrodes arranged for solder bumps are provided on the rearmost surface of said electronic part, and a back electrode electronic part comprising: at least two first electrodes 4a, 4b positioned on a rear surface of said electronic part so as to be connected to a first solder bump, at least one second electrode 4a positioned on a rear surface of said electronic part so as to be connected to a second solder

bump, wherein said first solder bump has a larger lateral cross section than said second solder bump, wherein each of said first electrodes and second electrode are arranged in a matrix on said rear surface of said electronic part.

To further clarify the teaching of the limitations, "for a single first solder bump which is larger than second solder bumps for said electrodes arranged other than in said groups of electrodes," and, "so as to be connected to a first solder bump, wherein said first solder bump has a larger lateral cross section than said second solder bump," it is noted that these limitations are statements of intended use of the product which does not result in a structural difference between the claimed product and the product of Sakuyama. Further, because the product of Sakuyama has the same structure as the claimed product, it is inherently capable of being used for the intended use, and the statement of intended use does not patentably distinguish the claimed product from the product of Sakuyama.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneshiro as applied to claim 7, and further in combination with Sakuyama (6018462).

Kaneshiro does not appear to explicitly teach wherein the group of electrodes are directly connected to the first solder bump.

Nonetheless, as cited *supra*, Sakuyama teaches wherein a group of electrodes 4a-4d are directly connected to a first solder bump 9. Moreover, it would have been obvious to combine the product of Sakuyama with the product of Kaneshiro because it would reduce the size of the electronic part.

Claims 1 and 3-6 are rejected under 35 U.S.C. 102(e) as anticipated by Geffken (5883435) or, in the alternative, under 35 U.S.C. 103(a) as obvious over the combination of Geffken (5883435) and Dockerty (5796169).

At column 1, line 54-65, column 2, line 18 to column 4, lines 11, 31-35 and 51-54, column 5, lines 13-42, column 6, lines 31-33, column 7, line 31 to column 8, line 11, and column 8, lines 21-37, Geffken teaches the following:

1. A back electrode electronic part comprising: a main body 102 including a circuit 108, 110, 112; and electrodes 124, 126, 128 arranged for solder bumps 172, 174 on a back surface portion of said electronic part and connected to said circuit; wherein said electrodes are arranged in groups of electrodes 126, 128 at portions of the electrode arrangement; and said groups of electrodes are provided for a single first solder bump 174 which is larger than second solder bumps 170, 172 for said electrodes arranged other than in said groups of electrodes, and said

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groups of electrodes having a substantially same potential level when said circuit operates.

3. A back electrode electronic part according to 1, wherein said electrodes includes a non-contact electrode 172 which is not connected to said circuit.

4. A back electrode electronic part according to 1, wherein one of said electrodes of said group is a signal electrode.

5. A back electrode electronic part according to 1, wherein one of said electrodes of said group is a ground potential electrode.

6. A back electrode electronic part according to 1, wherein one of said electrodes of said group is a power supply potential electrode.

To further clarify the teaching of a first solder bump 174 which is larger than second solder bumps, it is noted that in Figure 7, the illustrated cross-sectional area of first solder bump 174 is larger than that of second solder bumps 170, 172.

To further clarify the teaching wherein the group of electrodes includes electrodes having a substantially same potential level when the circuit operates, it is noted that this limitation is an inherent property of the group of electrodes of Geffken because they are electrically interconnected by the bump. In any case, the limitation, "electrodes having a

substantially same potential level when said circuit operates," is a statement of intended function which does not result in a structural difference between the claimed product and the product of Geffken. Further, because the electrodes of Geffken are inherently capable of functioning as intended, the statement of intended function does not patentably distinguish the claimed electrodes from the electrodes of Geffken. It is well established that the manner in which a product operates is not germane to the issue of patentability of the product; *Ex parte Wikdahl* 10 USPQ 2d 1546, 1548 (BPAI 1989); *Ex parte McCullough* 7 USPQ 2d 1889, 1891 (BPAI 1988); *In re Finsterwalder* 168 USPQ 530 (CCPA 1971); *In re Casey* 152 USPQ 235, 238 (CCPA 1967). And, claims directed to product must be distinguished from the prior art in terms of structure rather than function. *In re Danley*, 120 USPQ 528, 531 (CCPA 1959). "Product claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

To further clarify the teachings wherein one of the electrodes of the group is a signal electrode, a ground potential electrode, and a power supply potential electrode, it is noted that the intended use of the electrode as a signal, ground and power electrode does not result in a structural difference between the claimed electrode and the electrode of

Geffken. Further, because the electrode of Geffken is inherently capable of being used as intended, the statement of intended use does not patentably distinguish the claimed electrode from the electrode of Geffken.

Because Geffken does not appear to teach literally that the first solder bump is larger than the second solder bumps, one of the electrodes of the group is a signal electrode, one of the electrodes of the group is a ground potential electrode, and one of the electrodes of the group is a power supply potential electrode, the claims are rejected in the alternative over the combination of Geffken and Dockerty.

In particular, at column 3, lines 1-5, column 3, lines 16-30 and 48-61, column 4, lines 23-26, column 4, line 35 to column 5, line 23, column 5, lines 37-47, and column 6, lines 17-31 and 38-40, Dockerty teaches that a first solder bump 16 is larger than second solder bumps 11, and an electrode 15 is a signal electrode, a ground potential electrode, and a power supply potential electrode. Moreover, it would have been obvious to combine the product of Dockerty with the product of Geffken because it would provide structural support, and signal, ground and power connections.

Claims 2 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Geffken (5883435) and Dockerty (5796169).

As cited supra, Geffken teaches the following:

2. A back electrode electronic part according to 1, wherein said electrodes are arranged in a matrix ["array"].

7. An electronic assembly comprising: a back electrode electronic part comprising: a main body including a circuit, and electrodes provided on a back surface portion of said electronic part and connected to said circuit, wherein said electrodes are arranged into groups of electrodes at portions of the electrode arrangement; said groups of electrodes includes said electrodes having a substantially same potential level when said circuit operates.

8. A back electrode electronic part according to 7, wherein said electrodes of said electronic part are arranged in a matrix.

9. A back electrode electronic part according to 7, wherein one of said integrated electrodes is a non-contact electrode which is not connected to said circuit.

However, Geffken does not appear to explicitly teach a printed circuit board having substrate electrodes corresponding to said electrodes provided for said electronic part, wherein

one of said substrate electrodes as a first substrate electrode is provided for each said groups of electrodes, and said substrate electrodes as second substrate electrodes other than said first substrate electrodes are provided for said electrodes of said electronic part other than in said groups of electrodes, and solder bumps including first solder bumps connected with said groups of electrodes and said first substrate electrodes and second solder bumps connected with said second substrate electrodes and said electrodes of said electronic part other than said groups of electrodes, and said groups of electrodes are corner portions.

Nonetheless, as cited, Dockerty teaches a printed circuit board 1 having substrate electrodes 34 corresponding to electrodes provided for an electronic part 3, wherein one of the substrate electrodes as a first substrate electrode is provided for electrode 15, and substrate electrodes as second substrate electrodes other than the first substrate electrodes are provided for electrodes 4 of the electronic part other than the electrodes 15, and solder bumps including first solder bumps 16 connected with the electrodes 15 and the first substrate electrodes and second solder bumps 11 connected with the second substrate electrodes and the electrodes of the electronic part other than the electrodes 15, and the electrodes 15 are corner

portions. In addition, it would have been obvious to combine the product of Dockerty with the product of Geffken because it would provide structural support.

Also, Geffken and Dockerty are applied to the rejection of claims 10-12 for the same reasons they were applied to the rejection of claims 4-6.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geffken or Geffken and Dockerty as applied to claim 1, and further in combination with Sakuyama (6018462).

The references applied to claim 1 do not appear to explicitly teach wherein said group of electrodes are directly connected to said first solder bump, wherein said electrodes arranged for solder bumps protrude from said electronic part so as to support said solder bumps, and wherein said electrodes arranged for solder bumps are provided on the rearmost surface of said electronic part.

Nevertheless, as cited supra, Sakuyama teaches these limitations. Furthermore, it would have been obvious to combine the product of Sakuyama with the product of the applied prior art, because it would reduce the size of the electronic part.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geffken and Dockerty as applied to claim 7, and further in combination with Sakuyama (6018462).

Sakuyama is applied for the reasons it was applied to the 35 U.S.C. 103(a) rejection of claims 13-15.

Applicant's amendment and remarks filed 11-20-2 have been fully considered, are addressed in the rejection supra, and are further addressed infra.

Applicant appears to argue that Geffken does not teach electrodes 126 and 128 provided on a back surface portion of the electronic part because, allegedly, Geffken does not teach that the electrodes are on the rearmost surface of the electronic part. This apparent argument is respectfully traversed because Geffken is not relied on in the rejection for a teaching that the electrodes are on the rearmost surface of the electronic part. In any case, as applied to the rejection, Geffken teaches at least that the electrodes are provided in close proximity with or in a direction or location with respect to a back surface portion of the electronic part; therefore, at least for this reason, Geffken teaches that the electrodes are provided on a back surface portion of the electronic part. See *May v. Carriage Inc.*, U.S. District Court Northern District of Indiana, 7 USPQ2d 1593, *Bocciarelli v. Huffman* (CCPA), 109 USPQ 385, and *Inverness Medical Switzerland GmbH v. Warner Lambert Co.*, U.S. Court of Appeals Federal Circuit, 64 USPQ2D 1933. In addition, the newly submitted dependent claims 15 and 18 limitation,

"wherein said electrodes arranged for solder bumps are provided on the rearmost surface of said electronic part" must further limit the independent claims 1 and 7 limitation "electrodes arranged for solder bumps on a back surface portion of said electronic part." Therefore, the submission of claims 15 and 18 is seen as an admission by applicant that the scope of claims 1 and 7 is not limited to electrodes provided on the rearmost surface of the electronic part.

Applicant also appears to argue that Geffken does not teach electrodes 126, 128. This apparent argument is respectfully traversed because Geffken teaches electrical conducting elements 127, 128 that emit, or collect electrons, or ions, or control their movement by means of an electric field on them; therefore, Geffken teaches electrodes as defined in the Manual of Classification, Class 257, Glossary.

The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS

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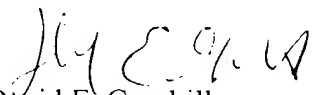
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of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is 703/308-7722.


David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
16-May-03